

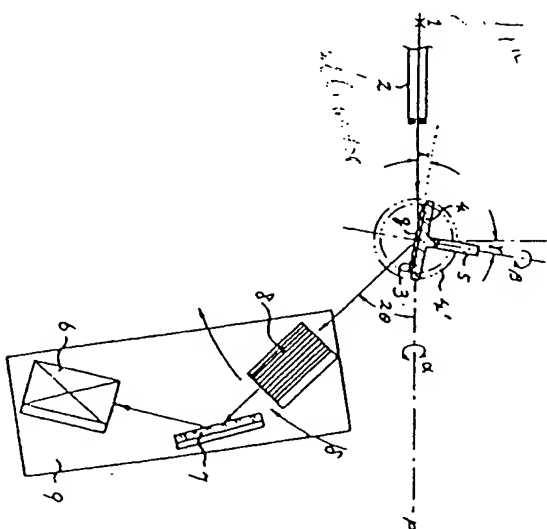
Fig. 1/1000

(54) OBSERVING APPARATUS OF POLE FIGURE OF X-RAY DIFFRACTION OF THIN-FILM SAMPLE

- (11) 1-270650 (A) (43) 27.10.1989 (19) JP
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PURPOSE: To obtain a complete pole figure by only one setting of a sample and thereby to enable the execution of highly precise observation, by a method wherein slender parallel X-rays are made to fall at a small angle on one point on a thin-film sample and the sample is rotated in a reciprocating manner within a range of 90 degrees around the X-rays as an axis.

CONSTITUTION: X-rays emitted from an X-ray source 1 and made parallel through a collimator 2 are made to fall on a sample 3. The sample 3 is attached on a base plate 4 and rotated at an angle of 360 degrees (an arrow β) by a shaft 5 fitted at a right angle to the base plate. The base plate 4 rotates in a reciprocating manner in the direction of an arrow α around the axis (p) of the X-rays within a range of 90 degrees, while it is inclined at an angle of about 0.5~3 degrees γ to the axis (p). On the lateral side of the axis (p), a stage 9 wherein an X-ray detector 6 and a spectral crystal 7 and a solar slit 8 both disposed in front of the detector are mounted is provided and it is rotated (an arrow θ) at a slow speed around a straight line (q), as an axis, which passes through a point of intersection of the sample 3 and the axis (p) and is perpendicular to the surface of paper. The stage 9 is inclined at an angle of about 2 γ degrees to the fitting plane of the collimator 2 and the plane of rotation. By this apparatus, the relationship between a diffraction angle 2θ determined by the rotations α and β and the rotation of the stage 9, and the intensity of diffracted X-rays, can be observed.



(54) PROCESSING METHOD OF DATA IN X-RAY DIFFRACTION APPARATUS

- (11) 1-270651 (A) (43) 27.10.1989 (19) JP
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PURPOSE: To determine a position and the intensity of a diffraction peak, by a method wherein three or more measuring points are set within the distribution width of diffracted X-rays, the shape of the diffraction peak is adapted to a Gaussian error distribution curve, and an undetermined constant is calculated from the intensity of X-rays obtained.

